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Filed 4/17/2004
Attorney docket no. BEA920030033US1

In the specification:

Please amend the title of the present patent application as follows.

LIMITING ACCESS TO PUBLICLY ~~EXPOSED~~ AVAILABLE OBJECT-ORIENTED INTERFACES VIA PASSWORD ARGUMENTS

Please replace the paragraph on page 2, lines 5-12, with the following paragraph:

Within the CIM, objects may be required by specification to expose, or make available, certain object-oriented interfaces publicly. That is, a given object, to comply with the CIM, may have to have certain methods that are defined by certain object-oriented interfaces, and which are available to be discovered and called by any other object within the CIM. Such object-oriented interfaces are said to be publicly queryable, because any object can learn of the interfaces by querying the objects supporting these interfaces. Such object-oriented interfaces are said to be publicly callable as well, because any object can call the methods defined by the interfaces.

Please replace the two paragraphs on page 2, line 22, through page 4, line 3, with the following two paragraphs:

The invention relates to limiting access to publicly ~~exposed~~ available object-oriented interfaces, via password arguments. A system of the present invention includes a number of inter-related first objects that share a predetermined password. A number of first object-oriented interfaces define methods supported by the inter-related first objects. The inter-related first objects publicly expose, or make available, the first object-oriented interfaces. The first object-

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oriented interfaces are thus queryable by both the inter-related first objects as well as second
objects, such that these objects are able to learn of the first object-oriented interfaces. However,
each first object-oriented interface includes a password argument to limit access to the inter-
related first objects sharing the predetermined the password.

Another system of the present invention also includes a number of second object-oriented
interfaces that define methods supported by the inter-related first objects. The inter-related first
objects publicly expose, or make available, the second object-oriented interfaces, too. The second
object-oriented interfaces are also queryable by both the inter-related first objects as well as the
second objects, such that these objects are able to learn of the second object-oriented interfaces.
The second object-oriented interfaces are required by specification, such as that for the Common
Information Model (CIM), and correspond to the first object-oriented interfaces. The second
object-oriented interfaces, however, do not have password arguments to limit access. The
methods defined by the second object-oriented interfaces are supported by the inter-related first
objects to return a "not implemented" message in response to invocation of the methods, or a
similar message that indicates that the functionalities of the methods has not been implemented or
executed. These kinds of messages are encompassed under the phrase "a type of 'not
implemented' message" as used herein, as can be appreciated by those of ordinary skill within the
art, and which is to be construed broadly. Furthermore, where the specific message "not
implemented" is indicated elsewhere in the detailed description, it is to be understood that such a
message is one specific example of the kinds of messages described here. Each second object-
oriented interface is thus a non-implemented and password-free version of one of the first object-
oriented interfaces.

Please replace the paragraph on page 6, lines 11-12, with the following paragraph:

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FIG. 3 is a method for limiting access to publicly ~~exposed~~ available object-oriented
interfaces via password arguments, according to an embodiment of the invention.

Please replace the paragraph on page 7, line 22, through page 8, line 12, with the following
paragraph:

The object 102 has two publicly queryable and publicly ~~exposed~~ available object-oriented
interfaces 108 and 110. The object-oriented interfaces 108 and 110 may in one embodiment both
define the same type of method that is supported by the object 102. A method is a procedure that
performs functionality, such that its invocation is defined by an object-oriented interface. The
object-oriented interface specifies the data, if any, that is to be received by the method from a
calling object, as well as the data, if any, that is to be returned to the calling object upon
completion of the method. The object-oriented interface specifies the data that is to be received
by the method as arguments. The object-oriented interfaces 108 and 110 differ in that the object-
oriented interface 108 lacks a password argument, as indicated by the crossed-out lock 112,
whereas the object-oriented interface 110 has a password argument, as indicated by the lock 114.
The object-oriented interface 108 may have one or more arguments not specifically represented in
FIG. 1. The object-oriented interface 110 may have one or more arguments in addition to the
password argument that are also not specifically represented in FIG. 1.

Please replace the paragraph on page 8, line 22, through page 9, line 6, with the following
paragraph:

Where the arguments that the object-oriented interface 108 are restricted by the
specification of the object-oriented software environment, access restriction to the object-oriented
interface 108 may not be easily accomplished. Because the object-oriented interface 108 is

publicly queryable, any object, such as the object 105 that is not inter-related to the object 102, can query the object 102 to learn of its interfaces, such as the object-oriented interface 108. Furthermore, because the object-oriented interface 108 is publicly exposed (i.e., is publicly made available), any object, such as the object 105, can call the object-oriented interface 108 to invoke its method.

Please replace the paragraph on page 10, line 17, through page 11, line 13, with the following paragraph:

Thus, embodiments of the invention can be summarized as follows. Within a given system, objects may be forced by specification or other requirements to provide certain interfaces that provide certain functionality, but which are required to be publicly exposed (i.e., be publicly made available) to all other objects. This means, however, that a programmer wishing to restrict invocation of this functionality as provided by the interfaces cannot ordinarily do so. Embodiments of the invention still have objects with the required interfaces that are publicly exposed available, but these interfaces instead return a "not implemented," or similar message, when called. Additional, corresponding objects are instantiated that have the same interfaces as the required objects, and that provide the same functionality, but which also include password arguments. When the interface of one of these corresponding objects is called, the object providing the interface verifies that the password argument provided matches a predetermined password, and only then actually performs the functionality. Therefore, unless another object knows the password, it is unable to cause the functionality to be performed. Thus, the programmer is able to restrict access to the functionality to a set of objects that know the password, and other objects that are not privy to the password can cause the functionality to be performed. The required object – the object that does not have the password argument – is still present, but primarily as a placeholder, to satisfy specification or other requirements dictating its

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presence. Furthermore, the required object can still be called, although it will simply return a "not implemented," or similar message._

Please replace the paragraph on page 14, line 19, through page 15, line 8, with the following paragraph:

The objects 206 each publicly expose, or make available, publicly queryable object-oriented interfaces, as have been described in relation to FIG. 1, that define methods that are supported by the objects 206. Some of these object-oriented interfaces may be required by the specification for the CIM, in that the CIM may require that the objects 206, as provider objects, expose, or make available, certain types of publicly queryable object-oriented interfaces that define methods that are invokable by all objects, including the objects 204 as well as the objects 206. Other of the object-oriented interfaces may correspond to these CIM-required object-oriented interfaces, in that they provide the same methods, but which add password arguments, so that invocation of their methods can be limited to just the objects 206. All of the objects 206 share the same predetermined password 214. The objects 206 that support the methods defined by object-oriented interfaces that do not add password arguments may return "not implemented" messages in response to invocation of these methods.

Please replace the abstract on page 27 with the following paragraph:

Limiting access to publicly exposed accessible object-oriented interfaces is disclosed. A system includes inter-related first objects that share a predetermined password. First object-oriented interfaces define methods supported by the first objects. The first objects publicly expose make available the first interfaces, which are queryable by the first objects and second objects. Each first interface includes a password argument to limit access to the first objects. The system

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may also include second object-oriented interfaces that define methods supported by the first

objects that publicly ~~expose~~ make available the second interfaces, which are queryable by the first

and the second objects. The second interfaces are required by specification, such as that for the

Common Information Model (CIM), and correspond to the first interfaces. The second interfaces

lack password arguments to limit access, and the methods defined thereby return "not

implemented" messages when invoked. Each second interface is a non-implemented and

password-free version of a first interface.